



## Successful laparoscopic management of adnexal torsion in a third trimester pregnant woman: a case report

Laparoscopic management in pregnant woman with AT

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### Abstract

Adnexal torsion (AT) is a rare emergency condition during the pregnancy. It can occur in all three trimesters but it is less common in the third trimester. However, its diagnosis and management are more complicated in a third trimester pregnant woman. Here, we reported the management of this rare pregnancy complication during the third trimester of pregnancy in order to highlight the importance of laparoscopic intervention to avoid midline and pararectal abdominal incisions.

### Keywords

Adnexal Torsion; Pregnancy; Third Trimester; Laparoscopy

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Introduction

Adnexal torsion (AT) is a rare but emergency condition that should not be missed in the case of acute pelvic pain in pregnant women. Although AT may frequently be presented with a lateralized lower abdominal pain, sometimes accompanied by nausea, vomiting, low-grade fever, and/or leukocytosis, it can be easily confused with other diseases [1]. Risk factors of AT include the presence of an ovarian cyst or mass and induction of ovulation which can cause enlarged multicystic ovaries [2]. Laparoscopy is usually indicated in the evaluation of acute abdominal / pelvic pain in pregnant women, especially when the diagnosis is not clear after less invasive evaluations [3]. Conservative treatment and proper management are necessary to avoid both maternal and fetal complications. We report a case of successful laparoscopic management of AT in a 3rd trimester pregnant woman.

Case Report

A thirty-seven-year-old woman who had gravidity 3, parity 2, and the history of 2 cesarean sections, referred to our clinic from emergency department due to nausea, vomiting, and left abdominal pain for 24 hours. She was at 30 weeks of gestation according to her last menstrual period. Transabdominal ultrasonography (USG) demonstrated a viable in utero fetus compatible with 30-weeks gestation, and with a normal amniotic fluid volume and placenta. Her left ovary was measured as 134 × 100 mm with no blood flow on color and power Doppler USG (Figure 1).



Figure 1. Fetal measurements and enlarged left ovary (measured as 134×100 mm)

Upon admission to our hospital the patient’s vital signs were within normal limits. The initial laboratory values: Hemoglobin was 10.8 g / dL, White Blood Counts 12.900 /mm<sup>3</sup>, Platelets 180.000 /mm<sup>3</sup>, and CRP 8.64. Her physical examination revealed tenderness and pain in the left lower abdominal quadrant spreading to the level of the umbilicus. We thought that it was AT and decided a laparoscopic approach after the family’s informed consent. Laparoscopic surgery was performed after the insufflation procedure (with 10 mmHg pressure). Then, a 10-mm port placed at midway between the xiphoid process and the umbilicus (Lee-Huang point) through a 10 mm 0-degree telescope. Two 5-mm working ports in the right and left iliac fossae were inserted. During the laparoscopic exploration, the left ovarian necrosis was seen due to twisting; therefore oophorectomy was performed. The hemostasis was achieved by suturing, and the necrotic tissue was retrieved through laparotomy with a Pfannenstiel incision. No complications such as uterine injury, massive bleeding, or fetal death were encountered during the laparoscopic procedure. The postoperative course of the patient was uneventful except for the minimal uterine contraction in a non-stress test. Pathological examination of the specimen revealed ovarian necrotic tissue which is 13 cm in diameter (Figure 2).



Figure 2. Necrotic ovarian tissue after the operation

The patient tolerated the procedure well and was discharged from hospital on the first day after surgery with a viable pregnancy. Weekly intramuscular injections of 250 mg of 17-hydroxyprogesterone caproate were administered until the 34th week of gestation to prevent preterm delivery. In follow-up, we detected effective contractions in her NST evaluation at the 37th week of gestation. Therefore, she underwent cesarean section with Pfannenstiel incision on the 37th week of gestation and delivered a healthy infant.

Discussion

AT is an emergency condition in women especially during pregnancy [1]. It is more common in women with IVF pregnancies due to the large size of stimulated ovaries [2]. Boyd and Riall have described that the ovarian size and weight, and utero-ovarian ligament length increase the risk of torsion. Although,

the right adnexa has been described in the literature [4] as most involved because of hypermobility of right adnexa which is longer than the left; our patient had the left adnexa affected. There are no characteristic symptoms or blood markers for AT, so the clinicians should be thought all differential diagnosis including appendicitis, ovarian cyst, pelvic inflammatory disease, and ectopic pregnancy. The most common signs are the sudden and acute pain, nausea, vomiting, and abdominal defense [5]. The imaging signs are also not specific for AT. The USG imaging can reveal edematous and enlarged ovary with an ovarian cyst and free peritoneal fluid or hemorrhage. The color Doppler USG may show an absence of arterial and venous blood flow in adnexa [6]. The pregnancy confuses the clinical situation and causes difficulty for differential diagnosis of AT [7]. If AT was suspected during pregnancy, MRI may be useful for the diagnosis [8]. We could not detect blood flow in patient's left ovary in color and power Doppler USG. Furthermore, the patient did not approve MRI technique in our case.

Laparoscopy is usually indicated in the evaluation of acute abdominal / pelvic pain in pregnant women, especially when the diagnosis is not clear after less invasive evaluations [3]. Although laparoscopy is now widely recommended for pregnant women, the risks remain controversial. Because of the several concerns about the potential risk to the fetus due to trocar insertion, CO<sub>2</sub> insufflation, and also regarding the technical ability to obtain proper operative exposure in the presence of a gravid uterus, the laparoscopic approach requires particular attention in pregnant women [9]. Sadot et al. have recommended using an open laparoscopy insufflation technique, a limitation of insufflation pressures (a maximum of 12 mmHg), CO<sub>2</sub> monitoring, and high placement of the medial trocar for the safety laparoscopic approach [10]. They have suggested that the more the pregnancy is advanced, the higher the medial trocar must be placed. The Guidelines Committee of the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) in May 2017 has recommended that intraabdominal insufflation pressure should be maintained at 10–15 mm Hg [11]. Based on this recommendation, the intraabdominal pressure was kept between 8 mm Hg–12 mm Hg during our operation. Also, we paid attention to the CO<sub>2</sub> monitoring by capnography and the region of initial trocar placement (Lee-Huang point, above of the uterine fundus). Therefore, we successfully completed the operation without any laparoscopic complication. Additionally, Guterman et al. showed that there was no case of conversion to laparotomy from laparoscopy and no intraoperative complication related with the laparoscopic approach in their 2nd and 3rd trimesters pregnant series [12].

Wilasrusmee et al. showed that there were a relative increased risk of premature deliveries and a risk of fetal death in the laparoscopic group compared to a laparotomy group [13]. Walsh et al. published that a rate of 6% of fetal loss was higher with laparoscopy method than that with open surgery [14]. There are no precise guidelines showing the effectiveness of tocolytic drugs to prevent premature deliveries. Guterman et al. suggested tocolytics in case of predicted signs of preterm delivery (such as beginning of the uterine contractions or an alteration in the cervical length) [12]. According to the guidelines of SAGES for the use of the laparoscopy during pregnancy, the specific agent

and indications for the use of tocolytics should be individualized and based on the recommendation of an obstetrician [11]. We used tocolytic agent after laparoscopy due to the minimal uterine contractions in non-stress test evaluation of the patient.

### Conclusion

We presented successful management and treatment of AT by laparoscopic approach during the 3rd trimester of pregnancy. We thought that the laparoscopy may be performed even in the 3rd trimester of pregnancy, if specific precautions are taken.

### Scientific Responsibility Statement

*The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.*

### Animal and human rights statement

*All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.*

### Conflict of interest

*None of the authors received any type of financial support that could be considered potential conflict of interest regarding the manuscript or its submission.*

### References

- Mathew M, Mubarak SA, Jesrani SK. Conservative management of twisted ischemic adnexa in early pregnancy. *Ann Med Health Sci Res.* 2015; 5(2): 142–4.
- Rackow BW, Patrizio P. Successful pregnancy complicated by early and late adnexal torsion after in vitro fertilization. *Fertil Steril.* 2007; 87: 9–12.
- Kocaal PC, Simsek O, Saribeyoglu K, Pekmezci S, Goksoy E. Laparoscopic surgery in pregnant patients with acute abdomen. *Ann Ital Chir.* 2015; 86(2): 137–42.
- Boyd CA, Riall TS. Unexpected gynecologic findings during abdominal surgery. *Curr Probl Surg.* 2012; 49:195–251.
- Zacharoula S, Setubal A. Acute abdomen in pregnancy due to isolated fallopian tube torsion: the laparoscopic treatment of a rare case. *World J Clin Cases.* 2014; 2(11): 724–7.
- Vijayaraghavan SB. Sonographic whirlpool sign in ovarian torsion. *J Ultrasound Med* 2004; 23(12): 1643–9.
- Zucchini S, Marra E. Diagnosis of emergencies in gynecology and during the first trimester of pregnancy. *J Ultrasound.* 2014; 17(1): 41–6.
- Eskandar O, Eckford S, Watinson T. Safety of diagnostic imaging in pregnancy. Part 2: magnetic resonance imaging, ultrasound scanning and Doppler assessment. *Obstet Gynecol.* 2010; 12: 171–7.
- Rollins MD, Chan KJ, Price RR. Laparoscopy for appendicitis and cholelithiasis during pregnancy: a new standard of care. *Surg Endosc.* 2004; 18(2): 237–41.
- Sadot E, Telem DA, Arora M, Butala P, Nguyen SQ, Divino CM. Laparoscopy: a safe approach to appendicitis during pregnancy. *Surg Endosc.* 2010; 24(2): 383–9.
- Pearl JP, Price RR, Tonkin AE, Richardson WS, Stefanidis D. SAGES guidelines for the use of laparoscopy during pregnancy. *Surg Endosc.* 2017; 31(10): 3767–82.
- Guterman S, Mandelbrot L, Keita H, Bretagnol F, Calabrese D, Msika S. Laparoscopy in the second and third trimesters of pregnancy for abdominal surgical emergencies. *J Gynecol Obstet Hum Reprod.* 2017; 46(5): 417–22.
- Wilasrusmee C, Sukrat B, McEvoy M, Attia J, Thakkestian A. Systematic review and meta-analysis of safety of laparoscopic versus open appendicectomy for suspected appendicitis in pregnancy. *Br J Surg.* 2012; 99(11): 1470–8.
- Walsh CA, Tang T, Walsh SR. Laparoscopic versus open appendicectomy in pregnancy: a systematic review. *Int J Surg.* 2008; 6(4): 339–44.

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